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Kathy Hirsh-Pasek and Rebecca Treiman

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Doggerel: motherese in a new context*

KATHY HIRSH-PASEK
University of Pennsylvania

AND REBECCA TREIMAN
Indiana University

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ABSTRACT

Four master–dog dyads were studied to determine whether the language that is used in speaking to dogs (doggerel) resembles the language that is used in speaking to children (motherese). The structural properties of doggerel are strikingly similar to those that have been reported for motherese. Certain differences between motherese and doggerel may arise in functional and social areas. The similarities between the two language registers suggest that motherese is not elicited in response to either the linguistic level or the cognitive/intellectual level of the child. Rather, the social responsiveness of the listener may be sufficient to elicit the motherese register.

INTRODUCTION

Prior to the 1960s, the few scientists who studied language development stressed the nature of the input language and its effects on language behaviour (e.g. Allport 1924, Miller & Dollard 1941, Skinner 1957). Chomsky (1959), in his critique of Skinner's work, revolutionized the study of language development. Chomsky argued that the input language was too imperfect, too fragmented, and too disorganized to support language acquisition. The input, in its variety and richness, was consistent with many different hypotheses (some of them wrong) that a child could entertain. Consistent with Chomsky's view, subsequent studies showed that neither expansions nor reinforcements had much effect on children's language production (e.g. Brown & Hanlon 1970, Cazden 1965).

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Recent years, however, have brought us full circle to a renewed interest in the input language. Amidst arguments that we must consider the social and functional characteristics of language, as well as its syntactic structure, psychologists again turn to the language environment. (For a set of studies that review these issues, see Snow & Ferguson (1977).) It is argued that the language directed to children is not as chaotic as had been supposed – that there exists a special language register of MOTHERESE. This register is characterized by short utterances, many repetitions, and few grammatical errors, among other features. (For reviews, see dePaolo & Bonvillian 1978, de Villiers & de Villiers 1978: 194.) Indeed, some argue that this register is specific to the teaching of language: that it is tailored to the language learner (e.g. de Paolo & Bonvillian 1978; for the most detailed statement of this hypothesis, see Levelt 1975). Many studies have examined the characteristics of motherese. Motherese has become a central theoretical concept in language acquisition research.

In this paper we examine motherese from a new perspective. We do so by investigation of DOGGEREL – the register that people use when talking to dogs. Such an investigation has been suggested (Berko-Gleason & Weintraub 1978, Brown 1977, Ferguson 1977), but has not been undertaken in detail. We shall demonstrate that the characteristics of doggerel are very similar to those that have been reported for motherese. Such similarities imply that motherese is not initially tailored to either the linguistic level or the cognitive level of the learner. Motherese is not elicited in response to the linguistic or cognitive characteristics of the child. Rather, we shall suggest, motherese may arise for social reasons.

METHOD

Subjects

Four women, along with their dogs, served as subjects. The women were between the ages of 25 and 32; two had young children and two did not.

Procedure

Subjects were asked to bring their dogs into the laboratory for a dog intelligence test (Coon 1977). This test requires that the dog perform a number of different tasks, such as finding a bone under a paper cup and retrieving a ball through a small opening in a shoe box.

The subjects were run in pairs. One subject went with the experimenter into the 'testing room' to give her dog the intelligence test. The other subject stayed with her dog in the 'waiting room'. The two subjects then reversed roles. We recorded the spontaneous speech of the subjects in the waiting room only. Both speech to the dogs and speech to the experimenter was recorded. To encourage speech to the dog when the experimenter was out of the room, it was suggested that the subject 'prepare' her dog for the test to come. Each subject spent about 20 minutes in the waiting room.

In a follow-up session, subjects were visited in their homes. There, further samples of speech to the dog and to adults were collected. At the end of this session, subjects were told the purpose of the experiment.

Data analysis

Subjects' utterances were divided into those addressed to dogs and those addressed to adults. An average of over 100 utterances of each type were available form each of the four subjects. Data analyses were performed by two judges. Inter-judge reliability was greater than 98 %, and disagreements were resolved by discussion.

RESULTS

Our objective is to document the characteristics of doggerel and compare them to those of motherese. We focus on eight characteristics that have been routinely reported in the motherese literature, and discuss each in turn. The findings are reported in Table 1, which shows the mean values obtained for each of the characteristics in speech to dogs and speech to adults.

Utterance length

Motherese is characterized by short utterances. Average lengths of about 4 words per utterance have been reported (e.g. Snow 1977). In contrast, mothers' utterances to adults average 10 or 11 words in length (e.g. Newport, Gleitman & Gleitman 1977). Likewise, utterances to dogs average 3·59 words, while utterances to adults in our sample average 9·36 words. Utterances directed to dogs are significantly shorter than those directed to adults ($t(3) = 13{\cdot}45$, $P < 0{\cdot}005$, one-tailed).[1]

Sentence type

Motherese, it has been reported, contains relatively few declarative sentences and many imperatives and questions (e.g. Newport *et al.* 1977). Our data show a similar pattern. In Table 1, under the heading of 'sentence type', grammatical utterances are classified as declaratives, imperatives, or questions. The proportion of declaratives is significantly lower to dogs than to adults ($t(3) = 17{\cdot}82$, $P < 0{\cdot}005$), and the proportion of imperatives is significantly higher ($t(3) = 9{\cdot}57$, $P < 0{\cdot}005$). The proportion of questions appears also to be higher to dogs than to adults ($t(3) = 2{\cdot}18$, $P < 0{\cdot}1$).

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[1] All statistical tests are one-tailed.

TABLE 1. *Mean values for various characteristics in speech to dogs and speech to adults (Standard deviations are given in parentheses)*

	To dogs	To adults
Utterance length in words	3·59 (0·52)	9·36 (0·46)
	%	%
Sentence type		
Declarative	28·9 (11·6)	87·9 (5·7)
Imperative	50·4 (10·7)	0·6 (0·7)
Question	20·9 (9·2)	11·6 (5·1)
Verb tense		
Present	89·1 (2·2)	58·5 (16·3)
Past	4·5 (4·7)	31·9 (14·8)
Other	6·6 (4·2)	9·6 (3·9)
Repetition		
Exact	7·1 (6·1)	1·0 (1·5)
Partial	15·8 (8·7)	0·0 (0·0)
Dog imitation	3·0 (3·5)	0·0 (0·0)
Non-repetition	74·1 (10·0)	99·0 (1·5)
Well-formedness		
Grammatical	81·7 (11·1)	74·0 (5·4)
Fragment	7·5 (6·9)	11·3 (4·5)
Interjection	10·3 (5·8)	10·3 (3·8)
Ungrammatical	0·5 (0·7)	4·5 (1·8)
Sentence nodes		
1	95·7 (2·8)	71·4 (8·1)
2	4·1 (2·0)	22·9 (6·4)
3 or more	0·3 (0·6)	5·8 (4·0)
Tag questions	6·2 (3·5)	2·4 (1·7)
Deictic utterances	1·2 (1·0)	2·0 (1·4)

Verb tense

Present-tense verbs predominate in motherese (e.g. Remick 1976). Again, our data show the same pattern. The subjects use present-tense verbs more frequently to dogs than to adults ($t(3) = 3{\cdot}40$, $P < 0{\cdot}025$), and past-tense verbs less frequently ($t(3) = 2{\cdot}89$, $P < 0{\cdot}05$).

Repetition

Mothers, when talking to their children, often repeat their own utterances, either exactly (exact repetitions) or in part (partial repetitions) (e.g. Cross 1977, Newport, *et al.* 1977, Snow 1972). Likewise, our subjects make higher proportions of exact and partial repetitions to dogs than to adults ($t(3) = 1{\cdot}92$, $P < 0{\cdot}1$, and $t(3) = 3{\cdot}64$, $P < 0{\cdot}025$, respectively). In all, 23 % of utterances to dogs involve some form of repetition. This value is identical to the value for motherese reported by Newport *et al.* (1977). Masters were also observed to imitate their dogs' noises (a category we have labelled 'dog imitation'), just as mothers sometimes imitate their babies'. || !?

Well-formedness

The language used to children is more grammatical than the language used to adults (e.g. Newport *et al.* 1977). Likewise, the language used to dogs is more grammatical than the language used to adults. In Table 1, under the heading of WELL-FORMEDNESS, utterances are divided into the categories of grammatical sentences, fragments (constituents uttered in isolation such as *your biscuit*), interjections (stock phrases such as *good boy*), and ungrammatical utterances. The proportion of grammatical sentences is significantly higher to dogs than to adults ($t(3) = 2{\cdot}57$, $P < 0{\cdot}05$), and the proportion of ungrammatical utterances is significantly lower ($t(3) = 5{\cdot}72$, $P < 0{\cdot}01$). There are no significant differences in fragments or in interjections.

Sentence nodes

Motherese is characterized by simple sentences, with few sentence nodes (e.g. Newport *et al.* 1977). Thus it contains few embedded clauses and few conjuctions. Doggerel, too, is simple in this way. There is a higher proportion of one-node utterances to dogs than to adults ($t(3) = 4{\cdot}89$, $P < 0{\cdot}01$), and a lower proportion of utterances with two nodes or three or more nodes ($t(3) = 2{\cdot}53$, $P < 0{\cdot}05$).

Tag questions

Motherese uses relatively many tag questions such as *You're sleepy, aren't you?* (e.g. Cross 1977). Again, doggerel findings parallel those in motherese. The proportion of tag questions to dogs significantly exceeds that to adults ($t(3) = 3{\cdot}48$, $P < 0{\cdot}025$).

Deixis

It has been reported that mothers use a relatively large proportion of deictic utterances to their children (e.g. Newport *et al.* 1977). These are utterances of the form *This is a ball*; *That is red.* Newport *et al.* (1977) report that no fewer than 16% of utterances to children are of this sort. We find, however, that there are NO more deictic utterances to dogs than to adults ($t(3) = -0{\cdot}80$). This is the first clear difference that we have seen between motherese and doggerel.

Informally, we noted several other characteristics of doggerel that parallel those of motherese. Doggerel contains diminutives such as *cutie* and *ballie*, many phonological deformations such as *wanna* and *gotcha*, and the characteristic high-pitched voice with extreme intonational markings. For all of the characteristics we have discussed, we noted no difference between the dog owners who had children and those who did not.

In short, when we compare doggerel to motherese on those measures that are routinely used to document motherese, doggerel is strikingly similar to motherese.

DISCUSSION

Dogs do not talk and we cannot realistically expect them to learn to talk. The finding that talk to dogs and talk to children share so many properties forces us to ask WHY the properties of motherese (well-formedness, high pitch, etc.) emerge – especially in this context.

Closer inspection of these properties reveals some interesting facts. Consider the characteristic well-formedness of motherese and doggerel – a property often thought to aid language learning. We have evidence (at least in the case of doggerel) that this property is an artifact of utterance length. It

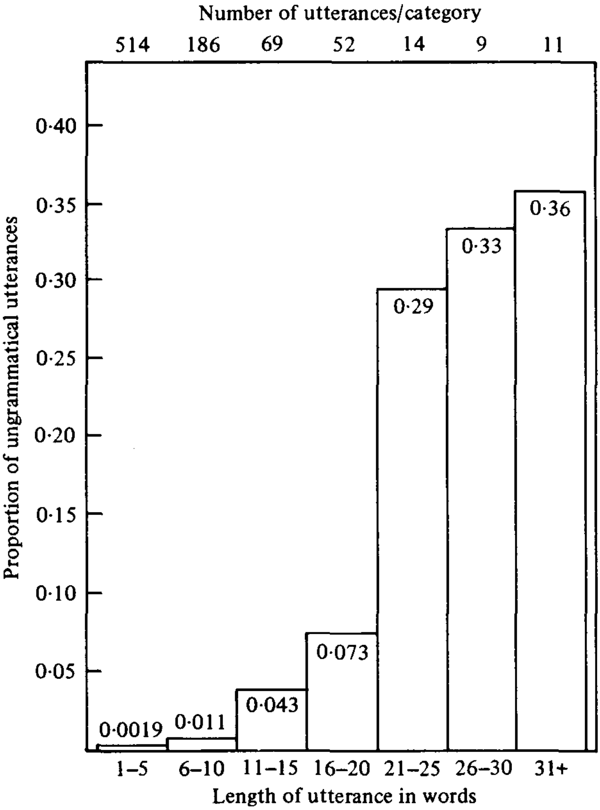

Fig. 1. Proportion of ungrammatical utterances (and total number of utterances) at different lengths.

arises because utterances are short, not because the language is DESIGNED to be highly grammatical. We took the full corpus of utterances – both utterances to dogs and utterances to adults – and divided them into seven categories based on their length. Fig. 1 shows the proportion of ungrammatical utterances in each category, along with the total number of utterances per category.

Ungrammaticality increases with increasing utterance length (rank order correlation = $1{\cdot}0$, $P < 0{\cdot}05$). This result suggests that utterances to dogs are more grammatical than utterances to adults because they are shorter, leaving less opportunity for grammatical slip-ups. The same argument would probably hold for motherese. That is, since mothers use short utterances to children, and since short utterances are likely to be correct, motherese will be highly grammatical.

The similarity between motherese and doggerel further suggests that motherese is not elicited in response to the linguistic level or the cognitive/intellectual level of the child. Some investigators (e.g. Levelt 1975) have posited that motherese arises in response to the child's linguistic level. If this were true, language to dogs should not be so similar as language to children, for the linguistic abilities of the two species are vastly different. The dog does not display a level of linguistic knowledge such that any degree of motherese should be elicited from the caretaker. Other investigators (e.g. Newport *et al.* 1977) have suggested that motherese arises in response to the cognitive/intellectual level of the child. If this were true, doggerel should again be unlike motherese, for dogs are surely at a lower intellectual level than are children.

Thus the striking similarities between motherese and doggerel indicate that motherese is not initially tailored to the linguistic or cognitive level of the child. These similarities suggest that motherese might play a broader and less specific role than that of teaching formal language structure.

While motherese and doggerel seem alike syntactically, they may differ in other important respects. These differences may direct us to areas in which caretakers do adjust their speech to the linguistic level of the listener. Attention to these areas may highlight ways in which the input language has an effect on language development.[2] Recall, for example, the one clear difference we found: doggerel does not employ deixis while motherese does. This difference is a FUNCTIONAL one. Deixis is used in the tutorial fashion – to label objects and to introduce new words and concepts. People do not do these things with their dogs. Similarly, the functions of other categories may differ in doggerel and motherese. Snow (1977) has observed that questions to children are often tutorial in nature, for example 'What colour is this?' Questions to dogs are never of this sort. We suggest that differences between doggerel and motherese will emerge in areas of content and function, but not in syntax, except in so far as syntactic categories reflect functional ones.

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[2] We do not mean to claim that areas in which motherese and doggerel are alike necessarily have no effect on language development. We suggest, however, that areas in which the registers differ are more likely to play a role.

We observed some other differences between motherese and doggerel: differences that may be characterized as 'conversational' differences. Although we have not quantified these observations, it is our impression that people respond to a dog's signals less than they would to a child's. Snow (1977) reported that mothers take the burps or coos of pre-verbal infants as conversational signals. They almost invariably respond. On the other hand, our subjects often failed to respond when the dogs barked or whined. In what seemed an unambiguous situation to an observer, a master did not respond for five minutes as a dog tapped its nose on the doorknob and barked. Snow (1977) also observed that mothers, anxious to interact with their infants, often take both parts in a conversation. They ask a question, and then answer it themselves. Such occurrences were very infrequent with dogs. From a conversational view, then, doggerel may differ from motherese.

CONCLUSION

Researchers have suggested that motherese emerges in response to the impoverished language structures of the child (Levelt 1975). The idea that motherese is linguistically simple is at first glance plausible: its sentences are short. As Newport *et al.* (1977) showed, however, this characterization does not fit other aspects of motherese. On the whole, motherese is not syntactically simple. Further, the linguistic hypothesis fails to explain why motherese occurs with dogs. Newport *et al.* (1977) proposed a cognitive hypothesis for the existence of motherese. They suggested that motherese emerges in response to the immature intellect of the child. Yet this hypothesis also fails to explain why motherese occurs with dogs, since dogs display none of the cognitive properties that were loosely implied by Newport, Gleitman & Gleitman. In short, we have argued that the structural similarities between motherese and doggerel preclude these linguistic and cognitive/intellectual interpretations.

Why then does motherese occur? Although dogs differ from children in that they cannot talk and do not reason, they do share with children one central characteristic – social responsiveness. Social responsiveness, even devoid of additional linguistic or cognitive cues, seems sufficient to elicit the basic form of motherese. Why social responsiveness should elicit short utterances, high pitch, and so on is still unexplained. Perhaps the short sentences with their intonational packaging arise from our desire to interact. Perhaps this packaging is the linguistic means for the promotion of reciprocity. Only future investigation will tell. Yet we CAN conclude, by default, that motherese does not emerge because of the linguistic or cognitive/intellectual characteristics of the listener. Instead, we propose that motherese is triggered by the social responsiveness of the listener, be it child or dog.

REFERENCES

Allport, F. H. (1924). *Social psychology*. Cambridge, Mass.: Houghton-Mifflin.

Berko-Gleason, J. & Weintraub, S. (1978). Input language and the acquisition of communicative competence. In K. E. Nelson (ed.), *Children's language*, Vol. 1. New York: Gardner.

Brown, R. (1977). Introduction. In C. E. Snow & C. A. Ferguson (eds), *Talking to children: language input and acquisition*. Cambridge: C.U.P.

Brown, R. & Hanlon, C. (1970). Derivational complexity and order of acquisition in child speech. In J. R. Hayes (ed.), *Cognition and the development of language*. New York: Wiley.

Cazden, C. (1965). Environmental assistance to the child's acquisition of grammar. Doctoral dissertation, Harvard University.

Chomsky, N. (1959). Review of Skinner's 'Verbal behavior'. *Lg* **35**. 26–58.

Coon, K. (1977). *The dog intelligence test*. New York: Avon.

Cross, T. G. (1977). Mothers' speech adjustments: the contribution of selected child listener variables. In C. E. Snow & C. A. Ferguson (eds), *Talking to children: language input and acquisition*. Cambridge: C.U.P.

de Paolo, B. M. & Bonvillian, J. B. (1978). The effect on language development of the special characteristics of speech addressed to children. *JPsycholingRes* **7**. 189–211.

de Villiers, J. G. & de Villiers, P. A. (1978). *Language acquisition*. Cambridge, Mass.: Harvard University Press.

Ferguson, C. A. (1977). Baby talk as a simplified register. In C. E. Snow & C. A. Ferguson (eds), *Talking to children: language input and acquisition*. Cambridge: C.U.P.

Levelt, W. J. M. (1975). What became of LAD? *Peter de Ridder Publications in Cognition*, 1. Lisse, Netherlands: Peter de Ridder Press.

Miller, N. E. & Dollard, J. (1941). *Social learning and imitation*. New Haven: Yale University Press.

Newport, E. L., Gleitman, H. & Gleitman, L. R. (1977). Mother I'd rather do it myself: some effects and non-effects of maternal speech style. In C. E. Snow & C. A. Ferguson (eds), *Talking to children: language input and acquisition*. Cambridge: C.U.P.

Remick, H. (1976). Maternal speech to children during language acquisition. In W. von Raffler-Engel & Y. Lebrun (eds), *Baby talk and infant speech*. Amsterdam: Swets & Zeitlinger.

Skinner, B. F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.

Snow, C. E. (1972). Mothers' speech to children learning language. *ChDev* **43**. 549–65.

—— (1977). The development of conversation between mothers and babies. *JChLang* **4**. 1–22.

Snow, C. E. & Ferguson, C. A. (1977). *Talking to children: language input and acquisition*. Cambridge: C.U.P.